

JAPAN

EDICT OF GOVERNMENT

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JIS T 9241-1 (2008) (English): Hoists for the transfer of persons with disabilities -- Part 1: Classification and general requirement

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*The citizens of a nation must
honor the laws of the land.*

Fukuzawa Yukichi

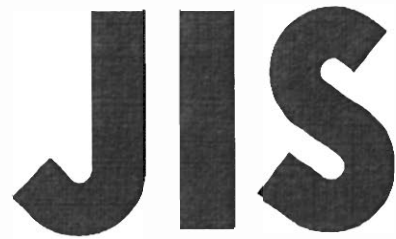
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JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS T 9241-1 : 2008

(JASPA/JSA)

**Hoists for the transfer of persons with
disabilities — Part 1: Classification
and general requirement**

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Contents

	Page
Introduction	1
1 Scope	1
2 Normative references.....	1
3 Terms and definitions	1
4 Classification and division.....	3
4.1 Classification	3
4.2 Division (symbol for division) according to maximum load	3
5 Design and construction	4
5.1 General	4
5.2 Design	4
5.3 Construction	4

Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Assistive Products Association (JASPA)/ Japanese Standards Association (JSA), with a draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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JIS T 9241 consists of the following 5 parts under the general title “*Hoists for the transfer of persons with disabilities*”:

Part 1 : Classification and general requirement

Part 2 : Mobile hoist

Part 3 : Stationary hoists

Part 4 : Rail guide hoists

Part 5 : Sling Sheets

Hoists for the transfer of persons with disabilities—

Part 1: Classification and general requirement

Introduction

This Japanese Industrial Standard is a comprehensive provision for hoists that are specified in the related standards divided into parts 2 to 5. This Standard specifies classification and division, and requirements applied commonly to these parts.

1 Scope

This Standard specifies the classification and the general requirements for hoists used for the persons unable to easily transfer or move on their own (hereafter referred to as “hoists”) and body-support units. This Standard does not apply to the apparatus for transferring to other floors.

NOTE : This Standard specifies characteristics of hoists for the transfer of persons with disabilities. However, the provisions related to the characteristics intend to be used only for the classification and general requirements of hoists but not for the conformity assessment.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 9702 *Safety of machinery—Principles of risk assessment*

JIS T 9241-2 *Hoists for the transfer of persons with disabilities—Part 2: Mobile hoist*

JIS T 9241-3 *Hoists for the transfer of persons with disabilities—Part 3: Stationary hoists*

JIS T 9241-4 *Hoists for the transfer of persons with disabilities—Part 4: Rail guide hoists*

JIS T 9241-5 *Hoists for the transfer of persons with disabilities—Part 5: Sling Sheets*

3 Terms and definitions

For the purposes of this Standard, the following terms and definitions apply.

3.1 mobile hoist

a hoist fitted with a device or devices (e.g. wheels) that is freely movable and propellable along the floor, and with which a lifted person is lifted, transferred or moved

The mobile hoist includes a wheeled hoist and a hoists trolley.

3.2 wheeled hoist

a type of mobile hoists with casters that is freely movable and propellable along the floor, and with which a lifted person is lifted, transferred or moved

3.3 hoists trolley

a type of mobile hoists that is freely movable and propellable along the floor and that mounts a stretcher on which a lifted person is held, transferred or moved

3.4 stationary hoist

a hoist with which a lifted person is lifted, transferred or moved within a pre-defined area and which is fixed to a wall, ceiling, floor, bathtub, bed, etc.

3.5 stationary hoist fixed to the wall/walls, floor and/or ceiling

a type of stationary hoists to be used that is fixed to wall(s), floor and/or ceiling, etc.

3.6 stationary hoist fixed to, mounted in, or on another product

a type of stationary hoists to be used that is fixed to bathtub or bed, etc.

3.7 rail guided hoist

a hoist that is transferred along the rail fixed above the head, for example, to the ceiling, wall or support

The rail guided hoist includes a ceiling hoist and a stationary free standing hoist.

3.8 ceiling hoist

a type of rail guided hoist which is an overhead mounted hoist fixed to the ceiling or wall(s)

3.9 stationary free standing hoist (free standing type)

a type of rail guided hoist to be used that is installed at the required place

3.10 body-support unit

the part of the hoist that supports the person being lifted, moved or transferred (e.g. sling, seat, stretcher, etc.) along with its associated attachment structure

3.11 sling

the body-support unit manufactured from such soft cloth that fits the body and to be attached to the lifting device of the hoist

3.12 rigid body-support unit

a preformed seat or recumbent device, manufactured from rigid materials (if necessary padded), or flexible materials encased by a frame, with associated connecting means for attaching to the lifting device of the hoist

3.13 maximum load

the greatest permissible load, including the lifted person, the body-support unit, etc.

3.14 lifted person

the person who is transferred by the hoist

4 Classification and division

4.1 Classification

4.1.1 Hoist

The classification of hoists shall be as given in table 1.

Table 1 Classification of hoist

Classification		Figure number	Applicable standard
Mobile type	Wheeled hoist	Figure 1	JIS T 9241-2
	Hoists trolley	Figure 2	
Stationary type	Stationary hoist fixed to housing parts (fixed to a wall(s), ceiling, floor, etc.)	Figure 3	JIS T 9241-3
	Stationary hoist fixed to, mounted in, or on another product (fixed to a bathtub, bed, etc.)	Figure 4, Figure 5	
Rail guided type	Ceiling hoist	Figure 6	JIS T 9241-4
	Stationary free standing hoist	Figure 7	
Other type of hoist		—	—
NOTE : Other type of hoist is listed to show their presence, but is not specified in JIS.			

4.1.2 Body-support unit

The classification of body-support unit shall be as given in table 2.

Table 2 Classification of body-support unit

Classification		Figure number	Applicable standard
Sling	Belt type sling	Figure 8 a)	JIS T 9241-5
	Seat type sling (without head support)	Figure 8 b)	
	Seat type sling (with head support)	Figure 8 c)	
	Leg separation type sling (without head support)	Figure 8 d)	
	Leg separation type sling (with head support)	Figure 8 e)	
	Other type of sling	—	—
Rigid body-support units		Figure 9	—
NOTE : Rigid body-support units and other type of sling are listed to show their presence, but are not specified in JIS.			

4.2 Division (symbol for division) according to maximum load

The division (symbol for division) according to the maximum load shall be as given in table 3.

Table 3 Division (symbol for division) according to maximum load

Symbol for division	Range of the maximum load kg
WS	60 or under
WM	Over 60 up to and including 80
WL	Over 80 up to and including 100
WLL	Over 100 up to and including 120
WX	Over 120

5 Design and construction

5.1 General

The requirements specified in **JIS T 9241-2** to **T 9241-5** as well as the following shall be conformed.

5.2 Design

5.2.1 Risk analysis

The methods specified in **JIS B 9702**, etc. shall apply to the risk analysis. Procedure and result of the risk analysis shall be maintained by the manufacturer in a written form.

5.2.2 Ergonomics factors

The ergonomics condition of hoists shall be considered as follows at the time of design. For securing the safety, the human ability, skill, limit and want shall be taken into account in addition to the mutual relation between human beings, technology and working environment.

- a) Marking and signal are clearly recognized without ambiguity.
- b) Control of actuator is so designed as to fit the physiological characteristics of the body part used for operating it.
- c) The design is made taking into account the influence given to the body by the working environment (noise, vibration, heat radiation, lighting, hazardous material and radioactivity).
- d) Fear which the lifted person might feel at the time of being lifted is considered.

5.3 Construction

The matters to be considered for construction are as follows.

- a) Body dimensions, posture, body action and biological dynamics shall be taken into account in designing the hoist. The design of handles and pedals shall meet with the following requirements.
 - 1) The distance between any handle (part intended to be grabbed) requiring an operating force of more than 10 N and any construction part of the hoist shall not be less than 35 mm.
 - 2) The distance between any upper surface of a pedal (in its operating position) and any other part of the hoist shall have a vertical toe clearance of not less than 75 mm.

- 3) The diameter of any operating handles and or knobs requiring an operating force of more than 10 N shall be between 19 mm and 43 mm.
 - 4) Pedals shall be placed not more than 300 mm above the surface of the floor.
 - 5) Hand operated controls shall be placed at a height of 800 mm to 1 200 mm above the floor.
 - 6) Handles for pushing and/or pulling shall be placed at a minimum height of 900 mm.
- NOTE : Operating controls used by the lifted person may require other positions.
- b) Waterproof property shall be considered for the operating devices of motor-driven hoists to be used in a wet area such as bathroom.

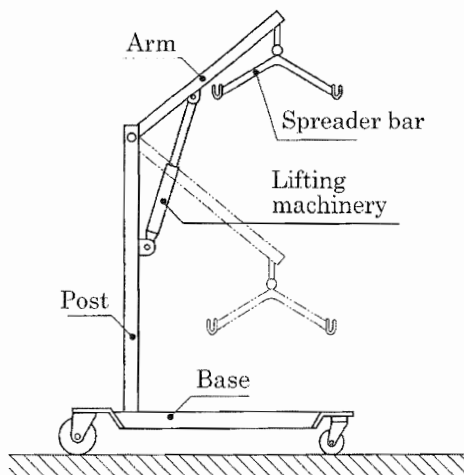


Figure 1 Example of wheeled hoist

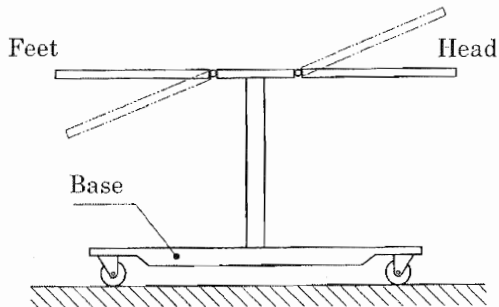


Figure 2 Example of hoists trolley

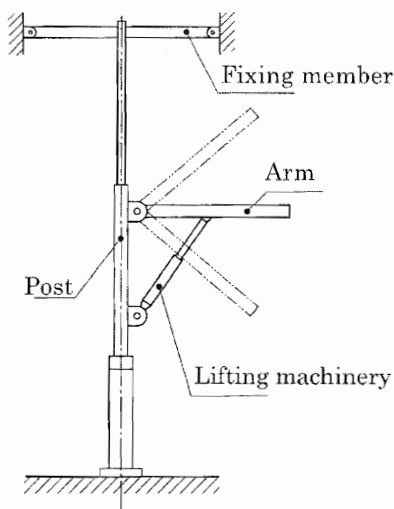


Figure 3 Example of stationary hoist fixed to the wall/walls, floor and/or ceiling

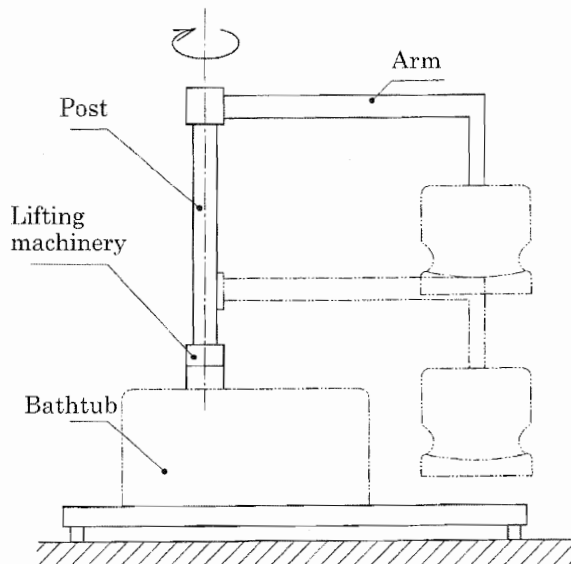


Figure 4 Stationary hoist fixed to, mounted in, or on another product (when fixed to bathtub)

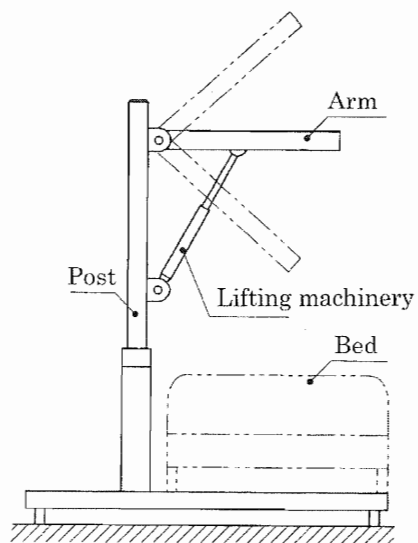


Figure 5 Stationary hoist fixed to, mounted in, or on another product (when fixed to bed)

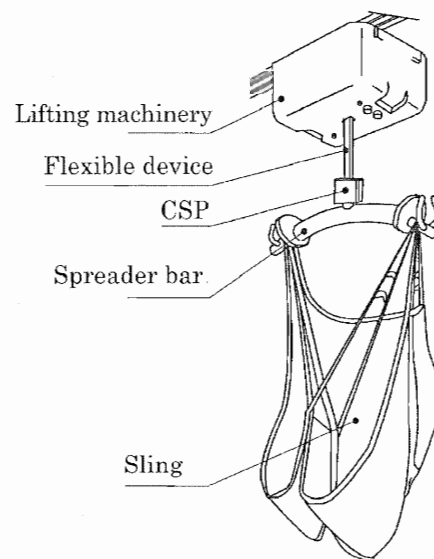


Figure 6 Example of ceiling hoist

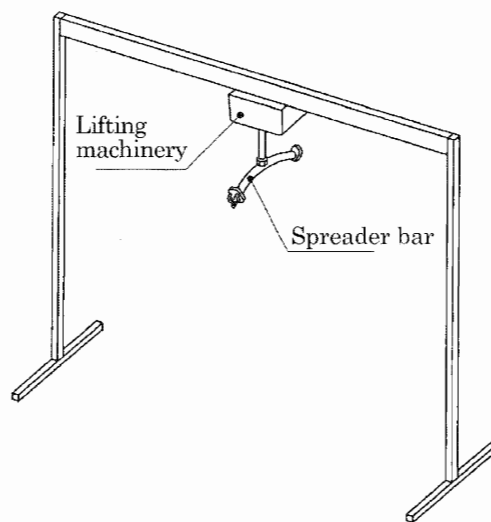


Figure 7 Example of stationary free standing hoist

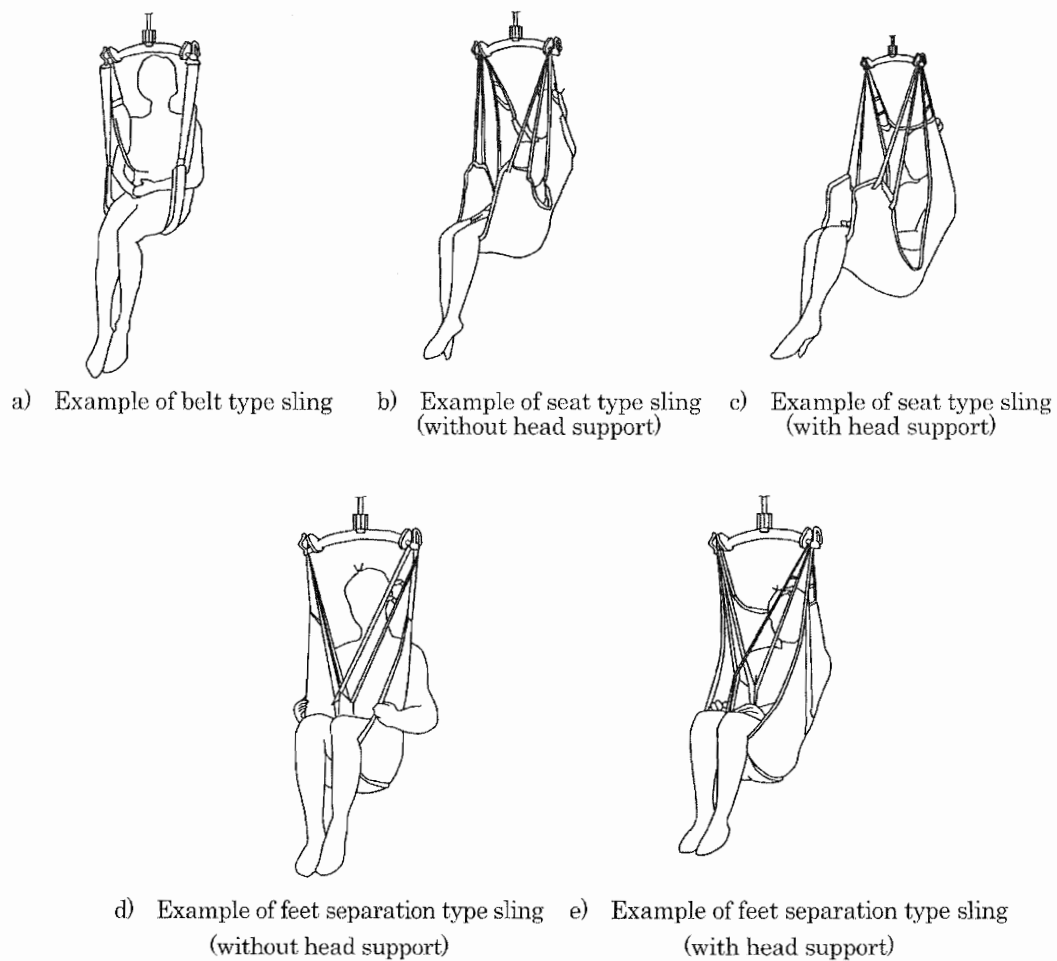


Figure 8 Examples of sling



Figure 9 Example of rigid body-support unit

Errata for JIS (English edition) are printed in *Standardization Journal*, published monthly by the Japanese Standards Association, and also provided to subscribers of JIS (English edition) in *Monthly Information*.

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